

REMARKS

Claims 1-19 are pending in this application. Claims 1-19 stand rejected. Reconsideration and further examination of the subject patent application in light of the present Amendment and Remarks is respectfully requested.

Rejections Under 35 U.S.C. §103

Claims 1-8, 10-15, 17, and 19 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Pat. No. 3,708,412 to Lofgren in view of U.S. Pat. No. 5,667,406 to Tabata et al., U.S. Pat. No. 4,948,496 to Chand and U.S. Pat. No. 4,522,899 to Illman et al. Applicant respectfully traverses these rejections.

In response, independent claim 1 has also been clarified by being further directed to “A current collector and seal combination for an electrochemical sensor comprising: a housing; relatively flat sensing and counter electrodes within the housing, the relatively, flat sensing and counter electrodes arranged in a mutually parallel arrangement and in contact with a liquid electrolyte; a plurality of connection apertures in a wall of the housing directly adjacent corresponding edges of the sensing and counter electrodes.” The mutually parallel electrodes and plurality of apertures in a wall of the housing directly adjacent corresponding edges of the sensing and counter electrodes are shown in FIGs. 2 and 6 of the specification.

Independent claim 1 has also been clarified by being further directed to “a plurality of relatively straight, flexible, metal current collectors, each of the plurality of currently collectors extending through a respective connection aperture of the plurality of apertures parallel to the mutually parallel sensing and counter electrodes with an end trapped against and in direct contact

with one of the sensor's electrodes.” The relatively straight current collectors parallel to the mutually parallel electrodes is shown in FIG. 2. The trapping of the current collectors against the electrodes is discussed in paragraph [0062] of the specification.

Claims 1-8, 10-15, 17, and 19 are now clearly differentiated over Lofgren, Tabata et al., Chand and Illman et al. For example, because of the complex electrode structures of Lofgren and Chand, neither reference could use relatively straight current collectors. In contrast, Tabata et al. and Illman et al. have nothing to do with electrochemical sensors and fail to provide any teaching in this regard.

Moreover, the claimed invention solves the difficult problem of making connections between the electrodes and current collectors by trapping the current collectors against the electrodes. Lofgren and Chand rely upon a connection structure that would have to be separately created. In contrast, Tabata et al. and Illman et al. have nothing to do with electrochemical sensors and fail to provide any teaching in this regard.

As such, Lofgren, Tabata et al., Chand and Illman and the combination of Lofgren, Tabata et al., Chand and Illman fail to teach or suggest each and every claim limitation. Since the combination fails to teach or suggest each and every claim limitation, the rejections are improper and should be withdrawn.

Claim 9 stands rejected under 35 U.S.C. §103(a) as being obvious over U.S. Pat. No. 3,708,412 to Lofgren in view of U.S. Pat. No. 5,667,406 to Tabata et al., U.S. Pat. No. 4,948,496 to Chand and U.S. Pat. No. 4,522,899 to Illman et al. and U.S. Pat. No. 5,224,875 to Watanabe et al. Applicant respectfully traverses these rejections.

It may be noted first in this regard that claim 9 is dependent upon claim 1 and includes all of the limitations of claim 1. As such, claim 9 is also directed to “a plurality of relatively

straight, flexible, metal current collectors, each of the plurality of currently collectors extending through a respective connection aperture of the plurality of apertures parallel to the mutually parallel sensing and counter electrodes with an end trapped against and in direct contact with one of the sensor's electrodes and a compliant seal of a thermoplastic material over-molded directly onto the flexible, metal current collector, the compliant seal inserted into the one of the connection apertures.”

It may be noted next that Watanabe et al. also requires a mechanical connection between the wire C and water sealing plug B. The Watanabe water sealing plug is made of soft rubber and fits over preexisting insulation on a wire.

As such, Lofgren, Tabata et al., Chand, Illman and Watanabe et al. and the combination of Lofgren, Tabata et al., Chand, Illman and Watanabe et al. fail to teach or suggest each and every claim limitation. Since the combination fails to teach or suggest each and every claim limitation, the rejections are improper and should be withdrawn.

Claims 16 and 18 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Pat. No. 3,708,412 to Lofgren in view of U.S. Pat. No. 5,667,406 to Tabata et al. , U.S. Pat. No. 4,948,496 to Chand and U.S. Pat. No. 4,522,899 to Illman et al. and U.S. Pat. No. 6,638,107 to Silberberg. Applicant respectfully traverses these rejections.

It may be noted first in this regard that claims 16 and 18 are dependent upon claim 1 and includes all of the limitations of claim 1. As such, claims 16 and 18 are also directed to “a plurality of relatively straight, flexible, metal current collectors, each of the plurality of currently collectors extending through a respective connection aperture of the plurality of apertures parallel to the mutually parallel sensing and counter electrodes with an end trapped against and in direct contact with one of the sensor's electrodes and a compliant seal of a thermoplastic

material over-molded directly onto the flexible, metal current collector, the compliant seal inserted into the one of the connection apertures.”

It may be noted next that Silberberg (as with Lofgren and Tabata et al.) fails to provide any teaching or suggest of these features. Silberberg, in fact, is merely directed to cable coupling devices.

As such, Lofgren, Tabata et al., Chand, Illman and Silberberg and the combination of Lofgren, Tabata et al., Chand, Illman and Silberberg fail to teach or suggest each and every claim limitation. Since the combination fails to teach or suggest each and every claim limitation, the rejections are improper and should be withdrawn.

Claims 1, 2, 4-8 and 12 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Pat. Publ. No. US 2006/0108223 to Derr (Derr ‘223) in view of U.S. Pat. Publ. No. US 2005/0179438 to Derr (Derr ‘438) and U.S. Pat. Publ. No. US 2003/0168336 to Downer et al. Applicant respectfully traverses these rejections.

In response, independent claim 1 has also been clarified by being further directed to “A current collector and seal combination for an electrochemical sensor comprising: a housing; relatively flat sensing and counter electrodes within the housing, the relatively, flat sensing and counter electrodes arranged in a mutually parallel arrangement and in contact with a liquid electrolyte; a plurality of connection apertures in a wall of the housing directly adjacent corresponding edges of the sensing and counter electrodes.” The mutually parallel electrodes and plurality of apertures in a wall of the housing directly adjacent corresponding edges of the sensing and counter electrodes are shown in FIGs. 2 and 6 of the specification.

Independent claim 1 has also been clarified by being further directed to “a plurality of relatively straight, flexible, metal current collectors, each of the plurality of currently collectors

extending through a respective connection aperture of the plurality of apertures parallel to the mutually parallel sensing and counter electrodes with an end trapped against and in direct contact with one of the sensor's electrodes.” The relatively straight current collectors parallel to the mutually parallel electrodes is shown in FIG. 2. The trapping of the current collectors against the electrodes is discussed in paragraph [0062] of the specification.

Claims 1, 2, 4-8 and 12 are now clearly differentiated over Derr ‘223, Derr ‘438) and Downer et al. For example, Derr ‘223 and Derr ‘438 are merely directed to probes and Downer et al. to pin assemblies. In contrast, claims 1, 2, 4-8 and 12 are directed to “a plurality of relatively straight, flexible, metal current collectors, each of the plurality of currently collectors extending through a respective connection aperture of the plurality of apertures parallel to the mutually parallel sensing and counter electrodes with an end trapped against and in direct contact with one of the sensor's electrodes and a compliant seal of a thermoplastic material over-molded directly onto the flexible, metal current collector, the compliant seal inserted into the one of the connection apertures.” As such, Derr ‘223, Derr ‘438 and Downer et al. and the combination of Derr ‘223, Derr ‘438 and Downer et al. fail to teach or suggest each and every claim limitation. Since the combination fails to teach or suggest each and every claim limitation, the rejections are improper and should be withdrawn.

Closing Remarks

For the foregoing reasons, applicant submits that the subject application is in condition for allowance and earnestly solicits an early Notice of Allowance. Should the Primary Examiner be of the opinion that a telephone conference would expedite prosecution of the subject

application, the Primary Examiner is respectfully requested to call the undersigned at the below-listed number.

The Commissioner is hereby authorized to charge any additional fee which may be required for this application under 37 C.F.R. §§ 1.16-1.18, including but not limited to the issue fee, or credit any overpayment, to Deposit Account No. 23-0920. Should no proper amount be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 23-0920. *(If filed by paper, a duplicate copy of this sheet(s) is enclosed).*

Respectfully submitted,

HUSCH BLACKWELL SANDERS
WELSH & KATZ

By: 

Jon P. Christensen
Registration No. 34,137

Paul M. Vargo
Registration No. 29,116

Dated: June 4, 2010

HUSCH BLACKWELL SANDERS
WELSH & KATZ
120 South Riverside Plaza, Suite 2200
Chicago, Illinois 60606
(312) 655-1500